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Strategies and Advancements in Net-Centric Operations

A Conversation
with Dr. James T. Blake

Q: Your office recently received more authority for responding to rapidly changing U.S. Army training requirements. Please explain.

Dr. Blake: The U.S. Army policy issued in late 2006 governing the Acquisition of System Training Devices encourages other program executive officers and program managers to foster a relationship with my organization for the life-cycle acquisition of training aids, devices and simulators. As a direct result of the ongoing implementation of the policy, we have become a key partner with them on several new training requirements.

For example, the Army recently validated and approved recommendations for the Mine Resistant Ambush Protected Vehicle Joint Program Office to resource several capabilities for the MRAP program. These capabilities include multiple training systems for which my office has been identified as the materiel developer.

We are engaged with both Army headquarters and the MRAP Joint Project Office to develop the required documentation in order to move MRAP training forward. This relationship can be attributed to efforts to institutionalize the policy across the Army.

Additionally, with our new Head of Contracting Activity authority, we are now better positioned to respond to the more traditional training requirements established by the Department of Army Director of Training and associated Training and Doctrine Command combat developers.

BIOGRAPHY

Dr. James T. Blake (SES) Program Executive Officer, U.S. Army Program Executive Office for Simulation, Training and Instrumentation

Dr. James T. Blake is the U.S. Army Program Executive Officer for Simulation, Training and Instrumentation, and the head of Contracting Activity for the Army. He is responsible for providing materiel solutions and services in modeling, simulation, training and test-instrumentation to support the Soldier.

Dr. Blake enjoyed a distinguished military career and retired as an Army colonel. In his last military assignment he was the senior uniformed Army scientist. He is a graduate of the Army Command and General Staff College, the Defense Systems Management College and the Army War College. He has a Ph.D. in computer science from Duke University.

Following retirement he joined academia and served as senior research scientist at Texas A&M University. While at Texas A&M, Dr. Blake joined the Simulation, Training and Instrumentation Command as the program manager for the Institute for Creative Technologies, the internationally recognized university affiliated Research Center for Advanced Modeling and Simulation.

Q: What are some of the new training approaches that have resulted from this policy implementation?

Dr. Blake: The Army's new games for training program is one example. The Army established a directed requirement for gaming and stood-up a TRADOC capabilities manager to jumpstart the program. My staff is now working on an acquisition strategy to support this new requirement with both short and long term program objectives.

Having the new contracting authority in my organization will facilitate our effort to respond rapidly to the training needs of the millennial generation using government-off-the-shelf and commercial-off-the-shelf game technology. Since the contracting decision-makers reside in-house now, we will see more rapid acquisitions for gaming technology.

Q: Many people think that training is still done with paper manuals and simulators, but in fact, training is becoming more "portable." How do you think it will continue to evolve?

Dr. Blake: As we learn to leverage the power of all communications media that are available and exploit the huge increase in bandwidth that has emerged in the past few years, training is becoming Soldier-centric. Bandwidth and computing power are making it possible to deploy simulations to a Soldier's personal computer.

That computer has the power to do much more modeling and visualization than it has in the past. When you couple this with communications bandwidth, it is possible to deliver rich simulations to the Soldier's desktop on demand.

With lower costs associated with this type of training, it should be possible to increase the breadth of Soldier skills with these computer-based simulations. In the past, most systems focused on kinetic combat skills. Now we are also beginning to deliver simulations that train medical, logistical, cultural and communications skills on a Soldier's individual computer.

Q: The Army is dealing with challenges today never faced before. Today, decisions are being made at lower command levels, and there are cultural issues being faced by troops. How is the Army addressing these training needs?

Dr. Blake: From my perspective as program executive officer, the Army is addressing the cultural issues our troops are facing with a number of training initiatives. One is the "Vcommunicator Mobile," an iPod-based language translator that displays an avatar who models correct cultural mannerisms.

For example, when the Soldier instructs the one-way translator to say, "peace be upon you," a common Arabic greeting, the speaker amplifies *"as-salam a-lei-kum"* and the avatar places his hand on his chest.

Soldiers are currently using this device in Iraq to communicate with the local populace while offering the culturally appropriate gesture. They also use it during their downtime to learn the language and become familiar with the cultural traits.

Q: What are some other new training tools for soldiers that are being employed?

Dr. Blake: Soldiers are also receiving cultural training through the DARWARS Ambush program. This is a PC-based gaming system that provides them with a platform for training cognitive skills in tactical decision making and communication. DARWARS was originally created as a networked convoy trainer and has been modified to train non-kinetic skills, to include cultural awareness.

Individual trainees move about in a shared virtual world and communicate over multiple radio networks. The missions are set against a detailed cultural context, which provides a coherent back story for all participants, guidance for role players and material for intelligence briefings. It offers an ability to develop new missions with shared characters and overlapping themes that play out over successive training events.

Tens of thousands of trainees have used the DARWARS system to learn to anticipate and respond to new situations, while practicing and refining their tactics, techniques and procedures.

Q: What do you see as a future direction for Army training?

Dr. Blake: I believe that we have taken the first step toward the next quantum leap in Army training with the One Semi-Automated Forces program. OneSAF, as it is called, is a major part of the embedded training solution for the Army's Future Combat Systems.

Eventually, the software will become part of all manned systems, which means that Soldiers will train in their actual vehicle, for example.

Currently, the OneSAF program is on the cusp of linking the virtual and constructive aspects of training simulations and making it almost a seamless process. Although we do those linkages today with other simulations, it is anything but routine.

Q: How will others use the OneSAF program to develop simulation training?

Dr. Blake: With the Synthetic Environment Core program, we are integrating OneSAF into the Close Combat Tactical Trainer, which will be the first solid proof that this assimilation is do-able. By integrating the OneSAF program into the CCTT, the simulator can be rapidly improved, thus ensuring a consistently up-to-date training experience for the warfighter.

The success of this integration will open the door for other system program managers to come on board and use the OneSAF program as their underlying simulation. This will save the Department of Defense a lot of money over the long haul and will allow interoperability like we have never seen before.

One thing that makes the OneSAF program unique for training is the level of automation that we can achieve. This should allow for a significant reduction in the number of operators required to support training events, which can be a considerable expense in simulated training.

Q: How will these OneSAF capabilities be applied by developers of training simulation systems?

Dr. Blake: The OneSAF business model is unlike any other training simulation in the Army. Our open source model allows others to make changes to the code and then pass that code back into the system for all to share.

This model will allow OneSAF to mature at a much faster rate than typical constructive training models as investments will occur in the underlying system well above and beyond the Army funding. It will only have to be done once as all the users will benefit from that code.

Lastly, I'd like to mention the importance of the OneSAF solution coupled with the Warfighters' Simulation, or WARSIM, program. Together, the two constructive simulations provide a common ground model to train Army divisions through echelon above corps.

Q: You took over as the Army Program Executive Officer for Simulation Training and Instrumentation at the outset of the conflicts in Afghanistan and Iraq. How have these wars affected the way the Army trains its Soldiers?

Dr. Blake: Clearly, the war has driven the way in which we train and equip our troops. As a result, it has greatly affected the work that we do and how we do it — everything from adopting a rapid acquisition approach to fielding training devices in direct response to what Soldiers are experiencing in the current operational environment.

To date, more than 200 government agencies and contractors are already using this software that models everything from individual Soldiers, tanks and weapon platforms to opposing enemy forces.

One example is the Army's Robotics System Joint Project Office, which is using the OneSAF program to solve training gaps since Soldiers do not get much hands-on time with a robotic system until they get into theater. OneSAF provides a high-fidelity training and analysis module that includes modeling a number of scenarios that a Soldier could experience while using the unmanned ground vehicle, like losing communications with the robot when it goes out of range.

In 2005, the Virtual Convoy Combat Trainer program emerged in response to lessons learned from units returning from Operation Iraqi Freedom that pointed to what was described as a "compelling need" for enhanced training in convoy operations. Lockheed Martin's Simulation, Training and Support business was one of the two firms who stepped up to the plate to satisfy this urgent requirement for our warfighters.

More recently, we awarded a contract for the fielding and sustainment of robotic systems to be used by Soldiers in theater for the detection and defeat of potentially hazardous objects, like improvised explosive devices. My office awarded the contract only six months after we received the requirement. More importantly, these robots will be in the hands of warfighters within 120 days of contract award.

The operational tempo has significantly heightened considering it once took years to procure and field something of this nature.

Q: What are some accomplishments of this accelerated approach?

Dr. Blake: Obviously, the nature of the training devices that we field is driven primarily by the threats that our warfighters are up against in Afghanistan and Iraq. The adversary employed IEDs against our troops; we turned around and instituted a training program in an effort to ensure that no Soldier deploys without the instructional skill set to detect and defeat these homemade bombs.

The Army recognized that the three most preventable combat deaths were attributed to a collapsed lung, a compromised airway and hemorrhaging. We responded by standing up the Army's only program of record for medical training. And, we aspire to train all Soldiers in first-responder medical treatment because, 'what if the combat medic is not there at the point of injury, or worse, if the medic is one of the injured?'

Time is of the essence on the battlefield, and we want every Soldier, unquestionably under stressful circumstances, to respond to the situation at hand like he or she has experienced it before. Training and simulation makes that possible.

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